THX Select powered subwoofer

operation manual

V-1250THX

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The lightning flash with arrowhead, within an equilateral triangle, is intended to alert the user of the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION:
TO PREVENT THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The exclamation point within an equilateral triangle is intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

1. SAFETY INSTRUCTIONS

1. READ INSTRUCTIONS - All safety and operating instructions should be read before this product is operated.

2. RETAIN INSTRUCTIONS - The safety and operating instructions should be retained for future reference.

3. HEED WARNINGS - All warnings on this product and in the operating instructions should be adhered to.

4. FOLLOW INSTRUCTIONS - All operating and use instructions should be followed.

5. ATTACHMENTS - Do not use attachments not recommended by the product manufacturer as they may cause hazards.

6. WATER AND MOISTURE - Do not use this product near water - for example, near a bath tub, wash bowl, kitchen sink, or laundry tub; in a wet basement; or near a swimming pool; and the like.

7. ACCESSORIES - Do not place this product on an unstable cart, stand, tripod, bracket, or table. The product may fall, causing serious injury to a child or adult, and serious damage to the product. Use only with accessories recommended by the manufacturer, or sold with the product. Any mounting of the product should follow the manufacturer's instructions and should use a mounting accessory recommended by the manufacturer.

8. POWER SOURCE - This product should be operated only from the type of power source indicated on the marking label. If you are unsure of the type of power supply to your home, consult your product dealer or local power company.

9. OVERLOADING - Do not overload wall outlets or extension cords as this can result in a risk of fire or electric shock.

10. LIQUID ENTRY - Never spill any liquid of any kind on the product.

11. SERVICING - Do not attempt to service this product yourself. Opening or removing covers, including any over bottom or side speaker drivers, may expose you to dangerous voltage or other hazards. Refer all service to qualified service personnel.

12. DAMAGE REQUIRING SERVICE - Unplug this product from the wall outlet and refer servicing to qualified personnel under the following conditions:

    a. When the power-supply cord or plug is damaged.

    b. If liquid has been spilled, or objects have fallen into this product.

    c. If the product does not operate normally by following the operating instructions. Adjust only controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to its normal operation.

    d. If the product has been dropped or damaged in any way.

    e. When the product exhibits a distinct change in performance - this indicates a need for service.

13. REPLACEMENT PARTS - When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in risk of fire, electric shock, or other hazard.

14. SAFETY CHECK - Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.

15. HEAT - This product should be situated away from heat sources such as radiators, heat registers, stoves, or other products (including amplifiers) that produce heat.

2. INTRODUCTION

Congratulations! Your new M&K THX Select® subwoofer truly represents the state-of-the-art in subwoofer performance. The new dimension of deep and powerful bass it provides will both thrill and excite you.

We strongly encourage you to read this owner's manual, as there is a great deal of information provided here to help you get the best possible performance.

If you have any questions about your subwoofer, please contact your M&K Home THX Audio dealer, or call the M&K factory directly at (310) 204-2854, from 8:30 AM to 5:00 PM Pacific Time. We will be more than happy to help you with any question, no matter how simple or complex it may be.

For more details on the installation and calibration of your Home THX Audio system, please refer to the THX Installation & Operation Manual.

THIS OWNER'S MANUAL HAS TWO SETS OF SET-UP INSTRUCTIONS.
ONE SET IS FOR USING THE SUBWOOFER WITH A THX CONTROLLER.
THE OTHER SET IS FOR USE WITH NON-THX PROCESSORS.

To operate it with a THX controller, see Section 4 on Page 5.

To use it with a non-THX controller, see Section 6 on Page 8.

3. WHERE TO PLACE YOUR SUBWOOFER

M&K Subwoofers perform well in most room locations. Unless your ear is a foot or two away from the Subwoofer, you will hear the deep bass coming exclusively from your Satellite (or main) speakers. There is no need to place your Subwoofer in-between the Satellite speakers.

For the best performance, we recommend that your subwoofer be placed against a wall, preferably in a corner.

The ideal place for the subwoofer is the corner with the best structural strength. If the corners are roughly equal in construction, use the corner nearest the listening position. If the listening position is in the front half of the room, place the subwoofer in a front corner. If the listening position is in the back of the room, place the subwoofer in a back corner.

Feel free to experiment with the orientation of the subwoofer cabinet. Sometimes the best sound results from aiming the subwoofer's front driver directly into the wall (1" to 2" from the wall itself).

If possible, avoid corners near doorways or openings.

Another option to find the best location for the subwoofer is to place the subwoofer at the listening position and walk around the room. Stand in and near each corner. The location where you hear the tightest bass with the most impact is probably the best location in the room for the subwoofer.

If you are using multiple subwoofers, place them in the same location. Stacking is best, but you can also put them side by side.

Alternately, you can put multiple subwoofers in different locations. This is appropriate when you have limited choices in locating the subwoofer and none of the available locations work well. Try to place multiple subwoofers at equal distances from the listening position to avoid phase cancellation.

Ultimately, the amount and quality of bass you get in your room are dependent on the room itself. Low frequency bass sounds are affected most by the size of the room and the method of construction used to build it. All rooms are different when it comes to reproducing bass, and in any given room, bass quantity and quality changes when the Subwoofer is moved from one location to another.

A simple rule to remember is that you get more bass when you move the Subwoofer towards any wall or corner. Moving it away from a wall or corner gives you less bass. Remember that the floor also loads the Subwoofer, and that maximum bass is found with the woofer on the floor in a corner.

In some rooms, a corner location may excite resonance modes, resulting in a muddy or boomy sound. In these rooms, a more central location along a wall, away from the corner, may give better results. If you experiment, try to find a spot where no bass notes seem to overpower others and the overall sound is powerful and clean. The goal is to achieve a smooth sound quality, with the entire bass spectrum equally prominent. In most rooms this is directly in a corner, not the center of the room.

Because the Subwoofer generates a great deal of energy, its output may vibrate objects close to it. If you hear such vibration, you may need to damp the vibration of nearby objects.

One Subwoofer is sufficient in a stereo system because of the nature of human hearing. The ear-brain hearing system is unable to locate the direction of bass sounds below approximately 100 - 150 Hz. The direction of low frequency sounds (drums, basses, etc.) is determined by the higher frequency overtones and harmonics that are reproduced by the Satellite speakers.

All M&K Powered Subwoofers have exceptionally sharp (36 dB/octave) low-pass filters to remove the midbass and midrange frequencies unwanted in a Subwoofer. This makes your M&K Subwoofer *truly* non-directional.

M&K THX Subwoofers are magnetically shielded. This allows you great freedom and flexibility in locating the subwoofer. Even if it is close to your television set, it will not interfere with the picture.

No matter where you put the Subwoofer, you must allow room for ventilation of its heatsink and backplate. The Subwoofer's power amplifier is mounted on the backplate, and it generates heat.

1. Leave clearance around the Subwoofer's heatsink. Do not cover it with drapes.

2. Do not place the Subwoofer near baseboard heaters or forced air heating outlets.

3. Do not use the Subwoofer outdoors or in a humid environment**.**

DO NOT PLUG THE SUBWOOFER INTO AN AC OUTLET UNTIL ALL SYSTEM WIRING IS COMPLETE

4. OPERATION WITH THX COMPONENTS

CONNECTING THE SUBWOOFER TO A THX CONTROLLER

The "INPUT" RCA terminals on the subwoofer connect it to the outputs of your THX controller. All of the input connections and controls for the subwoofer are located on its large metal backplate, which can be found on the back panel of the subwoofer cabinet.

To connect the subwoofer, run a shielded RCA - RCA interconnect cable from the SUBWOOFER OUTPUT jack on your THX controller to the "LEFT/MONO" "INPUT" jack on the subwoofer's backplate. See Figure 1 on Page 6.

Some THX controllers have a pair of stereo subwoofer outputs, while others have a single mono output. Your subwoofer is compatible with both types. If your THX controller has stereo subwoofer outputs, use a stereo shielded cable, connecting it to the LEFT and RIGHT "INPUT" terminals on the subwoofer. If your THX controller has only a single mono subwoofer output, use a mono cable and connect it to the subwoofer's "LEFT/MONO" "INPUT" jack. See Figure 1 below.

Do not use a Y-connector to connect the signal to both the LEFT and RIGHT inputs of the subwoofer. These inputs are summed to mono in the amplifier input stage, and if they are combined, the result will be too much gain and bass level.

FIGURE 1- WIRING ONE SUBWOOFER WITH A THX CONTROLLER

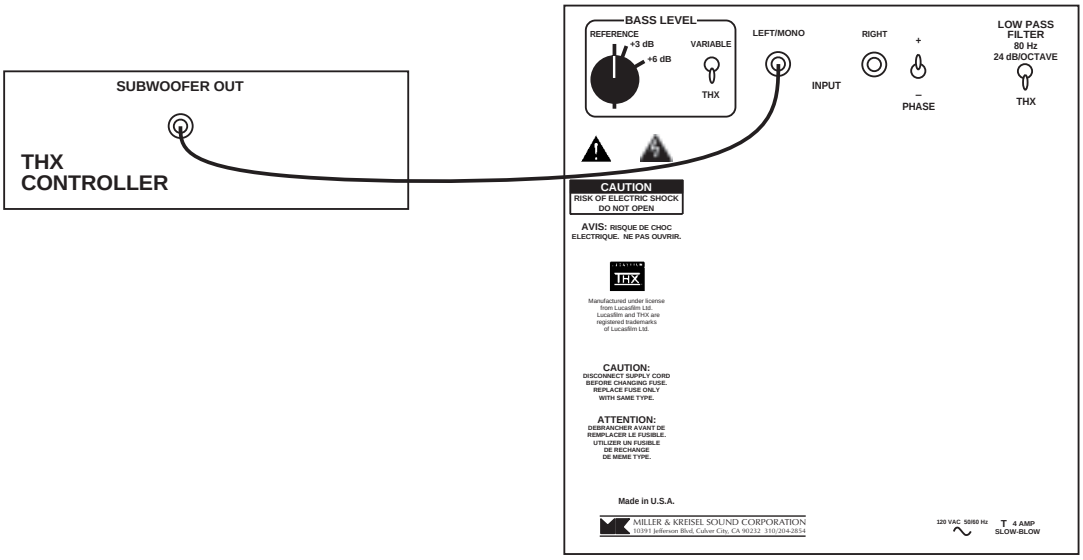
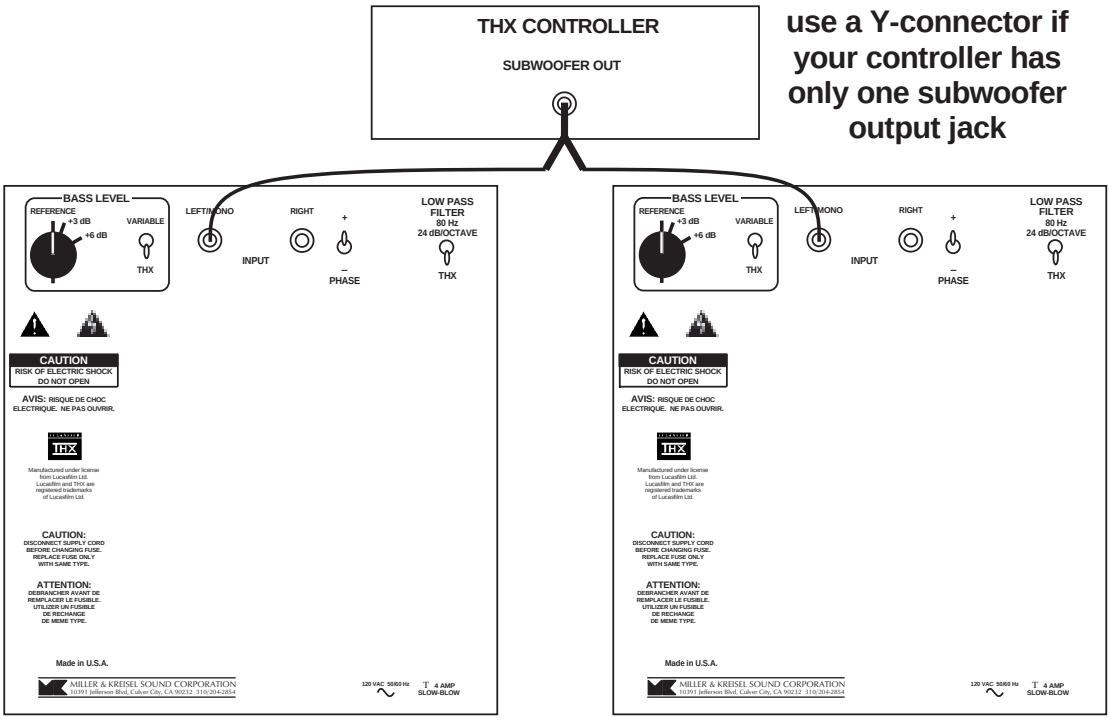


FIGURE 2 - WIRING TWO SUBWOOFERS WITH A THX CONTROLLER



If you have two subwoofers, do not use a Y - connector to feed both inputs on each subwoofer. Connect the interconnect cable to the LEFT/MONO "INPUT" only. Run the Left interconnect cable to the Left subwoofer and the Right cable to the Right subwoofer. See Figure 2 on Page 6.

TESTING THE SUBWOOFER (THX MODE)

Once all of the interconnect cables are in place, you are just about ready to plug in the subwoofer. Set the "LOW PASS FILTER" toggle switch to the "THX" position and the "BASS LEVEL" toggle switch to the "THX" position.

Set the "SUBWOOFER PHASE" switch to the "+" position. If your THX controller has a SUBWOOFER (OFF/ON) switch on its front panel, rear panel, or remote control, set it to ON. (See the controller's manual for details).

Plug the subwoofer's AC cord in. The red LED on the back panel should illuminate.

Play some program material that has good bass content through your system. Carefully advance the system volume control. You should hear the subwoofer operate. If you think the subwoofer isn't working, walk up to the speaker and listen to it from a distance of a foot or less.

If you confirm that it is not working, unplug the subwoofer and check all of your connections before trying it again. If you have a problem that you cannot solve, contact your dealer or the M&K factory.

When your system wiring is complete and the subwoofer is plugged into the wall, **leave it plugged in**, even when the system is turned off. The normal mode of operation for the subwoofer is to remain plugged in 24 hours a day. Among other things, this means that you don't have to walk over to the subwoofer to turn it on every time you want to use the system.

DO NOT PLUG THE SUBWOOFER INTO A SWITCHED OUTLET ON ANOTHER COMPONENT. IT CAN DRAW UP TO 400 WATTS FROM THE AC LINE. IT MUST BE PLUGGED INTO A SOLID AC LINE.

5. CALIBRATING THE SUBWOOFER (THX)

On the back panel of the subwoofer, three toggle switches allow you to select various modes of operation. Two are described here. A description of the function of the third toggle switch can be found in section 7, SATELLITE & SUBWOOFER PHASING TEST (page 13).

OPERATION OF THE "LOW PASS FILTER" SWITCH (THX)

When using the subwoofer with a THX controller, this switch should be set to the "THX" position. When using the subwoofer with a standard stereo system or a surround sound processor that is not THX-certified, this switch should be set to the "80 Hz 24 dB/OCTAVE" position.

The THX mode bypasses the internal crossover of the subwoofer and fixes its gain to a standard setting. The THX controller contains the crossover and sets the rolloff point of the signal fed to the subwoofer to 80 Hz (with a Linkwitz-Riley characteristic).

OPERATION OF THE "BASS LEVEL" SWITCH (THX)

When using the subwoofer with a THX controller, this switch should be set to the "THX" position. The controller sets the output level of the subwoofer, so this switch disables the subwoofer's level control. The "CALIBRATED" level control mark is referenced to the level set by the "THX" switch. If you set the switch to "VARIABLE" and the level control to "CALIBRATED," its output level is the same as when you set the switch to "THX."

The +2 and +4 marks indicate the points where your subwoofer is producing 2 dB and 4 dB, respectively, more output than the "CALIBRATED" level.

SETTING SUBWOOFER LEVEL (THX)

The proper method of setting the level of the subwoofer in THX mode is to use the low frequency pink noise test signal generator built into the THX controller and a sound level meter (available from Radio Shack). First set the master volume of the THX controller to the "0" or "REF" position. Then set the Subwoofer Output control on the THX controller so that the output of the subwoofer causes the sound level meter to read 75 dB (C scale, slow mode) when that test signal is playing. All channels of the THX system should be calibrated to this 75 dB level when using the unit's internal test signal.

Special Note: When calibrating the subwoofer level (and only the subwoofer level), you will find that the needle on your sound level meter will bounce plus or minus a couple of decibels when measuring the test signal. To set subwoofer level, read the AVERAGE meter level, not the peak level. Move around the room as you measure levels, so that your measurements account for the room reinforcements and cancellations found at various room locations.

For details on setting levels with your THX controller, see the instructions provided with that unit.

USING TWO SUBWOOFERS (THX)

Using two subwoofers in your THX system will give you the ultimate in bass performance. It will give you improved bass impact and definition, as well as greater output and dynamic range. If you locate the subwoofers in different parts of the room, you will get a better overall frequency response, because the room modes excited by one woofer are complemented by the presence of the other subwoofer. Alternately, if you stack two subwoofers, one on top of the other, their outputs will couple and give you an additional total of up to 6 dB of output.

Wiring with two subwoofers is simple. Instead of running two interconnect cables to one subwoofer, run one interconnect to each subwoofer, using each LEFT/MONO input jack. See Figure 2 (page 6).

6. OPERATION WITH A NON-THX PROCESSOR

OPERATION OF THE "LOW PASS FILTER" SWITCH

With a non-THX controller, preamp, etc., this switch should be set to the "80 Hz 24 dB/OCTAVE" position. **Do not operate this switch unless the "BASS LEVEL" control is set to "MIN."**

For non-THX systems, your subwoofer has been optimized for an 80 Hz crossover with a 24 dB/octave slope. This low pass filter makes a rapid transition to 36 dB/octave above 125 Hz, which provides the extremely sharp attenuation needed to make the subwoofer's sound non-directional.

For optimal performance, we strongly recommend that you use an M&K HP-80 High-Pass Filter. Your subwoofer with this filter and M&K Satellites forms a 4th order Linkwitz-Riley crossover between satellite and subwoofer. The linear phase of this crossover means uncompromised performance with great flexibility in system setup without elaborate calibrations or adjustments.

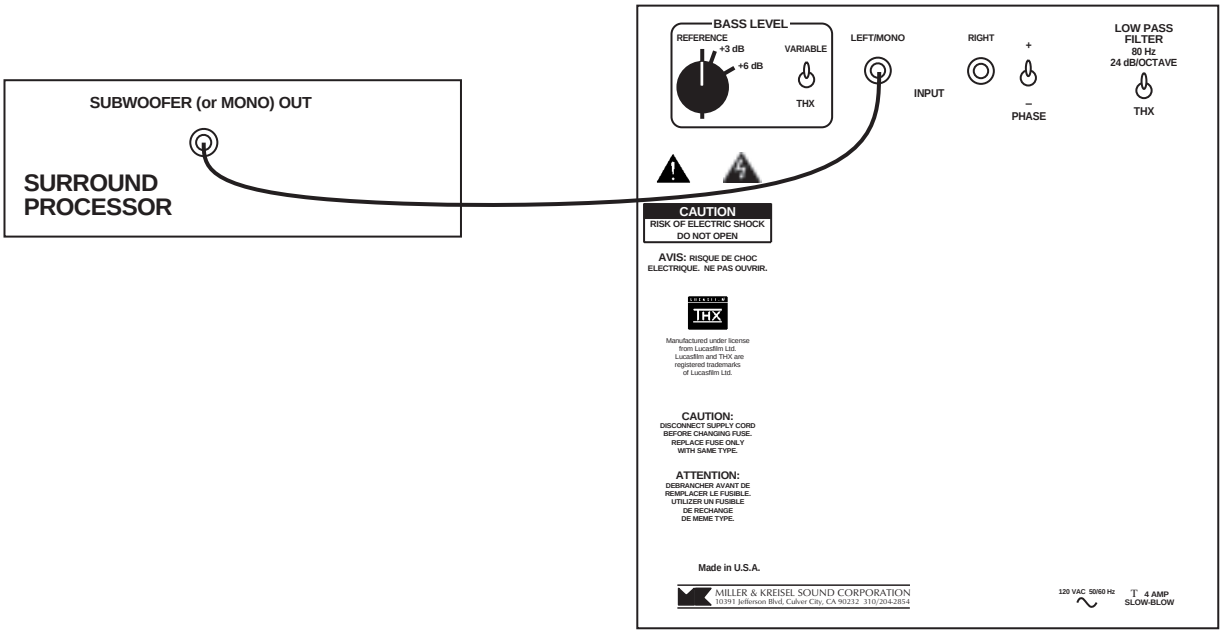
OPERATION OF THE "BASS LEVEL" SWITCH

When using the subwoofer with a non-THX processor, preamp, etc., this switch should be set to the "VARIABLE" position. The subwoofer level can then be set independently to match your speakers. The "CALIBRATED" mark is a reference relative to THX levels. For a discussion of this "CALIBRATED" mark, please see "OPERATION OF THE BASS LEVEL SWITCH (THX)" on page 7.

WIRING WITH A NON-THX PROCESSOR OR PREAMP

The "FROM PREAMP" RCA terminals on the subwoofer allow you to connect the subwoofer to preamp-level components other than THX controllers, such as preamplifiers, integrated amps and receivers with preamp outputs, high-pass filters, crossovers, standard surround sound processors, etc. All of the input connections and controls for the subwoofer are located on its large metal backplate, which can be found on the back panel of the subwoofer cabinet.

FIGURE 3 - WIRING ONE SUBWOOFER TO AN AMP OR PROCESSOR WITH A SUBWOOFER OUTPUT JACK (NON-THX)



If your surround processor has only one PREAMP OUTPUT (and no SUBWOOFER OUT), and you do not have an M&K High-Pass Filter or crossover, you must use a Y-connector to feed the amplifier and subwoofer. See Figure 5 above. If you have a surround sound processor with a SUBWOOFER OUTPUT jack, use it to feed the subwoofer. See Figure 5 on page 10.

Some surround processors/receivers/amps have very low output levels from their SUBWOOFER OUTPUT jacks. If you do not get enough bass when using the SUBWOOFER OUTPUT jacks on a non-THX processor, use that processor's PREAMP OUTPUT jacks instead. See Figure 5.

FIGURE 4 -WIRING TWO SUBWOOFERS TO AN AMP OR PROCESSOR WITH A SUBWOOFER OUTPUT JACK (NON-THX)

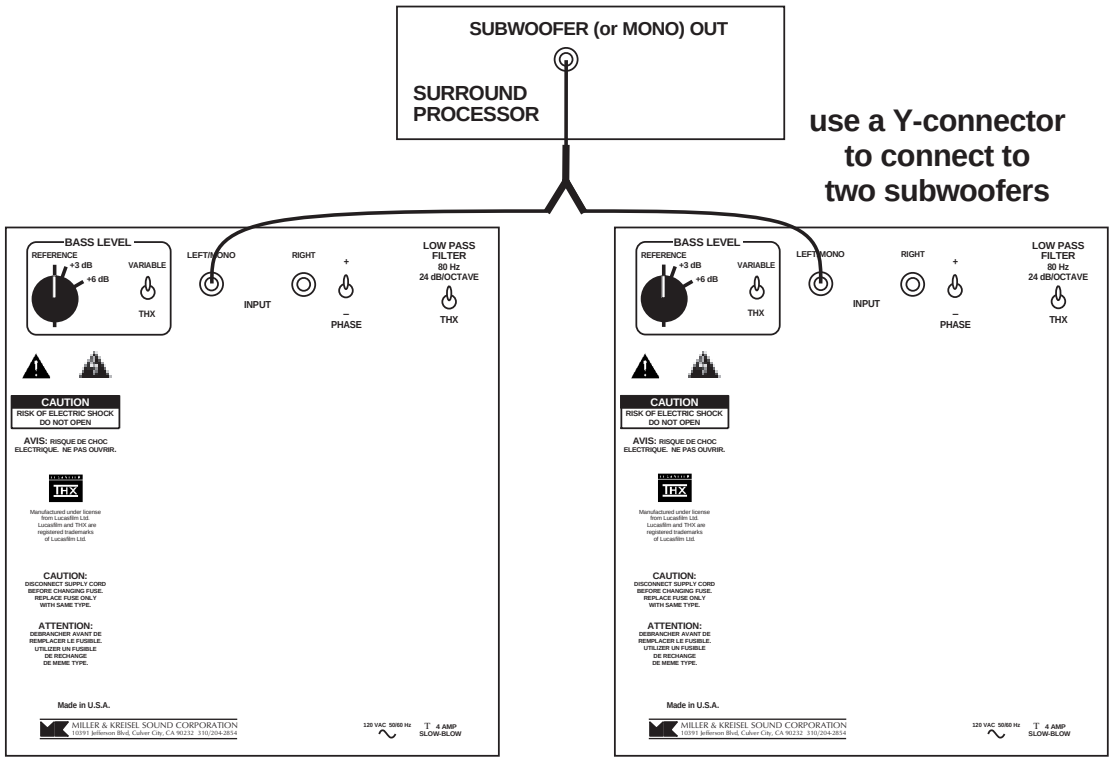
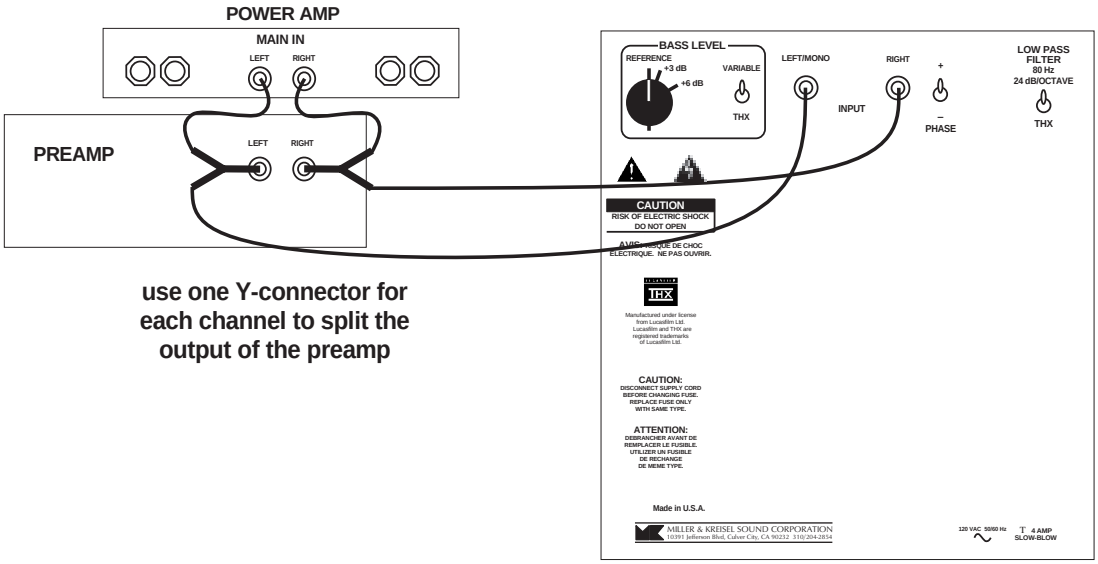
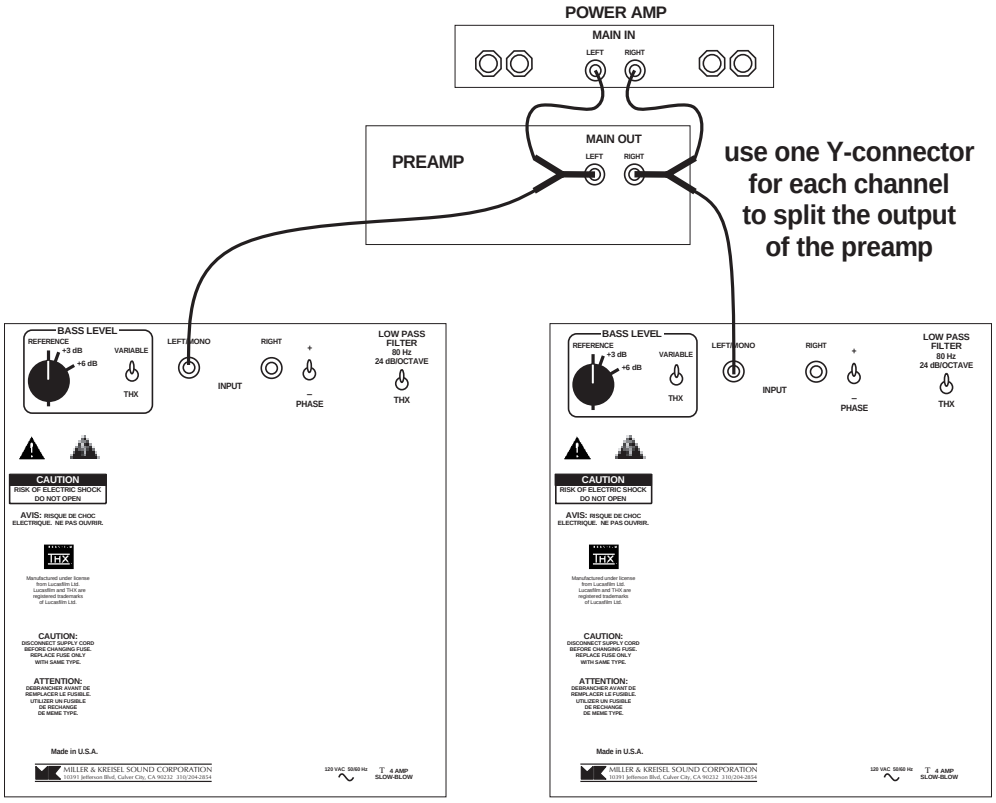


FIGURE 5 - WIRING ONE SUBWOOFER TO AN AMP OR PREAMP WITH ONE SET OF PREAMP OUTPUTS



To connect the subwoofer, run shielded RCA - RCA interconnect cables from the outputs on your component to the "INPUT" jacks found on the subwoofer's backplate. If your processor has a single subwoofer output, do not use a Y-connector to connect it to both the Left and Right input terminals of the subwoofer. The subwoofer combines both channels to mono in its amplifier input stage.

FIGURE 6 - WIRING TWO SUBWOOFERS TO AN AMP OR PREAMP WITH ONE SET OF PREAMP OUTPUTS



If you have two subwoofers, it is not necessary to use both inputs on each subwoofer. Connect the interconnect cable to one "FROM PREAMP" jack only**.** Run the Left channel interconnect cable to the Left subwoofer and the Right interconnect cable to the Right subwoofer. See Figures 4 and 6.

WIRING WITH THE M&K HP-80 OR VF-80 HIGH-PASS FILTERS (NON-THX)

The M&K HP-80 and VF-80 High-Pass Filters can improve any system that allows its preamp and power amp stages to be separated, by filtering the bass fed to the main amp and Satellite speakers.

These filters will give your system greater dynamic range, lower distortion, and an increased maximum output. To use these filters with an integrated amp or receiver, the amp or receiver MUST have back panel RCA jacks labelled PREAMP/MAIN OUTPUT **and** POWER AMP/MAIN INPUT. There may be a switch or jumper connections between them, which you will have to remove. If you have any questions about your components, contact your dealer or M&K.

For non-THX systems, your subwoofer is optimized for use with the HP-80 High-Pass Filter. We strongly recommend that you use this filter with any component system that allows for its use. When you use this subwoofer with an HP-80 and M&K Satellites, the combination forms a 4th order Linkwitz-Riley crossover between satellite and subwoofer. The linear phase of this crossover means uncompromised performance with great flexibility in system setup, without requiring elaborate calibrations or adjustments.

Do not use either of these filters with a THX controller. The THX controller has the appropriate filters in its built-in crossover circuitry. Also, do not use a SUBWOOFER OUTPUT jack on your amp or processor to feed any of these filters.

To connect one of these filters, run one set of shielded RCA - RCA interconnect cables from the

receiver, amp or preamp's MAIN OUTPUT to the input jacks on the HP/VF-80. Run another set of interconnects from the high frequency output jacks on the filter to receiver or amp's POWER AMP inputs. Last, run interconnects from the subwoofer output jacks to the subwoofer's "FROM PREAMP" jacks. See the instructions enclosed with your filter for wiring diagrams.

To use these filters, make certain that the "BASS LEVEL" switch is set to "VARIABLE" and that the "LOW PASS FILTER" switch is set to "24 dB/OCTAVE"

TESTING THE SUBWOOFER (NON-THX)

Once all of the interconnect cables are in place, you are ready to plug in your subwoofer. Make sure the "LOW PASS FILTER" switch is set to the "24 dB/OCTAVE" position and the "BASS LEVEL" control to set to "VARIABLE". Make sure the "SUBWOOFER PHASE" switch is set to the "+" position. Then plug the AC cord in. You should see the red LED on the back panel of the subwoofer illuminate.

When your system wiring is complete and the subwoofer is plugged into the wall, **leave it plugged in**, even when the system is turned off. The normal mode of operation for the subwoofer is to remain plugged in 24 hours a day. Among other things, this means that you don't have to walk over to the subwoofer to turn it on every time you want to use the system.

DO NOT PLUG THE SUBWOOFER INTO A SWITCHED OUTLET ON ANOTHER COMPONENT. THE SUBWOOFER CAN DRAW UP TO 400 WATTS FROM THE AC LINE. IT MUST BE PLUGGED INTO A SOLID AC LINE.

Now, play some music through your system to make sure that the Satellite speakers are working properly. If they are, carefully advance the "BASS LEVEL" control. The subwoofer should begin to play. Set the "BASS LEVEL" control where the subwoofer sounds in balance with the Satellite speakers. If the system is not working properly, unplug the subwoofer and check all of your connections. Call your dealer or the factory if you cannot solve any problem.

SETTING THE SUBWOOFER LEVEL (NON-THX)

Here are two ways to set the subwoofer level. First, if you can obtain a spectrum analyzer, you can accurately match the subwoofer to the main speakers. First feed a wideband pink noise signal into the full system (both the satellites and the subwoofer). Then set up the analyzer at the main listening position. Adjust the "BASS LEVEL" control until the analyzer display shows the flattest response through the 70 - 125 Hz midbass region.

If you don't have access to an analyzer, the best way to match the level of the subwoofer to your system is to do it by ear, listening over several hours to familiar recordings. Make adjustments to the level in small increments, depending on whether the bass level sounds too high or too low.

There is a possibility that your surround sound processor has a built in test generator for the subwoofer level, but the virtually all non-THX processors do not. If you do have such a surround sound processor, see SETTING SUBWOOFER LEVEL (THX), on page 8.

In any case, remember that you can always deliberately set the level higher if you want more bass or lower if you don't want to disturb your neighbors.

USING TWO SUBWOOFERS (NON-THX)

Using two subwoofers in your audio/video system will give you the ultimate in bass performance. It will give you improved impact and definition, as well as greater output and dynamic range. If you locate the subwoofers in different parts of the room, you will hear a better overall frequency

response, as the room modes excited by one woofer are complemented by the presence of the other. Alternately, if you stack two subwoofers, one on top of the other, their outputs will couple and give you an additional total of 6 dB of output.

Wiring with two subwoofers is simple. Instead of running two interconnect cables to one subwoofer, just run one interconnect to each subwoofer, using the LEFT/MONO input on each subwoofer. You don't need to use a Y-connector. See Figure 4 (page 10).

7. SATELLITE/SUBWOOFER PHASING TEST

(WITH BOTH THX AND NON-THX COMPONENTS)

Before you can sit down to enjoy your new subwoofer, you need to perform one simple Phasing Test. This test insures optimum sound in the critical bass frequencies where your subwoofer and Satellite or L/C/R speakers overlap.

When using the subwoofer with a THX controller and THX L/C/R speakers, the crossover slopes are linear phase. When the subwoofer is placed along the same axis as the front speakers, the system will tolerate a plus or minus 28 inch offset before significant losses at the crossover point are seen.

Here are two methods of setting the correct phase with your subwoofer.

PHASING TEST METHOD ONE

Set the switch labelled "SUBWOOFER PHASE" to the "+" position. Then, play a familiar CD, LP, laserdisc or tape with steady, consistent bass content. Listen carefully to the "mid-bass" region of 70 - 125 Hz. This is the part of the spectrum where electric or string basses and drums predominate.

Then, reverse the position of the "SUBWOOFER PHASE" switch. If it is set to the "+" position, set it to the "-" position. If it was set to the "-" position, set it to the "+" position. The best way is to have a partner work the switch while you sit in the main listening position and listen.

Now listen to the same music, concentrating on the mid-bass. If you hear less bass, set the "SUBWOOFER PHASE" switch to the opposite position. If you hear more bass, leave the switch where it is; the new position is correct.

PHASING TEST METHOD TWO

First, set the toggle switch labelled "SUBWOOFER PHASE" to the "+" position. Then, feed wideband pink noise (found on test CDs, the "Wow" disc, or a pink noise generator) through your front channel speakers and your subwoofer. You can do this test by listening, but it is best to use a spectrum analyzer and look at its display in the "mid-bass" region of 70 - 125 Hz.

Then, reverse the position of the "SUBWOOFER PHASE" switch. If it is set to the "+" position, set it to the "-" position. If it was set to the "-" position, set it to the "+" position. The best way is to have a partner work the switch while you sit in the main listening position and listen.

Now, listen to the same wideband pink noise or look at the spectrum analyzer output in the mid-bass region. If you hear/measure less bass, set the "SUBWOOFER PHASE" switch to the opposite position. If you hear/measure more bass, leave the switch alone; the new position is correct.

This test is necessary because the different distances from each speaker to your ears mean that it is possible that the Subwoofer's output may arrive at your ears out of phase with the Satellites' output. When this happens, the midbass is cancelled. Re-do this test any time you move any of your speakers or the listening position.

If you want to experiment, move the main speakers or subwoofer towards or away from your listening position, in small increments. When you hear the best combination of stereo image localization and focus with solid midbass impact and output, you have the ideal location.

If you have two subwoofers, perform one test for each subwoofer. When you perform each test, make sure the other subwoofer is not operating by either unplugging its input cable or its power cord.

8. TROUBLESHOOTING

Your subwoofer amplifier circuit provides high reliability, and, if necessary, easy modular parts replacement. This guide will help solve or diagnose most problems that may occur. Remember, if a fuse blows, you **must** replace it with the correct value to avoid fire hazards and to maintain the warranty.

1. If your subwoofer has no output:

a. Make sure that the subwoofer is plugged into an AC outlet.

b. If the "BASS LEVEL" switch is set to "VARIABLE", make sure that the "BASS LEVEL" control is set above the "MIN" position. Rotate it clockwise if it is set to the "MIN" position. Make sure that the SUBWOOFER OUTPUT level control on your processor or amp is set above the "MIN" position.

c. If the "BASS LEVEL" control is set to "THX", make sure that any SUBWOOFER OFF/ON switch (found on the controller front or rear panel or remote control) is set to ON. Make sure that the SUBWOOFER OUTPUT level control on your THX controller is set above the "MIN" position.

d. Check the red LED on the subwoofer's back panel. If the LED is not lit, check the AC fuse next to the LED. **Unplug the subwoofer before changing the fuse. See instructions on Page 15**. If the element inside the fuse is broken, replace the fuse. If it blows again, contact your dealer or M&K.

e. If the red LED is still lit, set the "BASS LEVEL" switch to the "VARIABLE" position. Turn the "BASS LEVEL" control to "MIN". Plug a standard RCA cable into the "LEFT/MONO" "FROM PREAMP" jacks. Lightly touch the plug at the free end of the cable. Then turn the "BASS LEVEL" control clockwise. If you hear a buzz or hum from the subwoofer when you touch the cable, the subwoofer is working. Look elsewhere in your system for the problem. If you hear no output, contact your dealer or M&K for service.

f. Make sure your cables are OK. Re- check all connections and replace any defective cables.

2. If the midbass range (the area of transition between Subwoofer and Satellite or L/C/R speakers) sounds weak:

See Section 7, PHASING TEST, on page 13. Reverse the position of the "SUBWOOFER PHASE" switch on the back panel of the subwoofer. The switch position that gives the most bass is correct.

3. If you hear a thump through the subwoofer every time you turn the rest of your audio system on (and your subwoofer is plugged in all the time):

Either the preamp, amp, receiver, or surround sound processor is generating the thump, and the subwoofer is reproducing it. Contact your dealer or the manufacturer of the other component.

4. If you hear a persistent hum or buzz through the subwoofer:

Because the subwoofer easily reproduces 60 Hz signals (the frequency of hum), it is often blamed for causing hum that originates elsewhere in the system. Always avoid running all speaker wires and RCA interconnect cables near to AC cords and component power supplies. Placing wires and cables close to AC lines often results in hum. If necessary, reroute your cables.

To identify the source of hum, remove all input cables to the subwoofer, but leave it plugged into the AC outlet. Set the "BASS LEVEL" switch to the "VARIABLE" position. Carefully turn the "BASS LEVEL" control up towards the "MAX" position. If you hear hum from the subwoofer, it is the source of the hum. If you hear no hum or much less hum, the problem is in another component or a ground loop.

For ground loop problems, when the subwoofer is plugged into a separate AC outlet, try plugging it into the same outlet as your amplifier or receiver. If that doesn't work, reverse the polarity of its AC plug. If you cannot solve the problem, call M&K or your dealer.

5. If you hear an unusual sound from the subwoofer when no signal or music is playing:

Try removing the input cables as described in Step 4 above. If the noise disappears, it is coming from another component. If it does not go away, contact your M&K dealer or the factory.

6. If the subwoofer will not play loud enough, AND it is connected to the SUBWOOFER OUTPUT jack on a non-THX surround sound processor:

Make sure that the "BASS LEVEL" toggle switch is set to "VARIABLE." Set the "BASS LEVEL" control to the "MAX" position. If you get bass output, but it is not enough, then the processor's output level is too low.

A few processors/receivers/amps have very low output levels from their SUBWOOFER OUTPUT jacks. If you do not have enough gain when using the SUBWOOFER OUTPUT jacks on a non-THX processor, use the processor's PREAMP OUTPUT jacks. See Figures 5 and 6 (pages 10 and 11).

IF YOU NEED TO REPLACE THE EXTERNAL FUSE:

First, unplug the subwoofer from the wall AC socket. Remove the fuse cap. Look carefully at the fuse's wire filament inside the glass. If it is broken, replace the fuse ONLY with one identical in size and value. Using a larger fuse will void your warranty AND MAY CREATE A FIRE HAZARD. Plug the subwoofer back in. If it does not work, unplug it immediately and contact M&K or your dealer for service.

REPLACEMENT FUSE VALUES

	110 VOLT (3 AG 1/4" x 1 1/4" slow blow)	220 VOLT (5 X 20 mm IEC-127/III)	220 VOLT
V-1250THX	2 amp	1 amp	T 800 mA (time-lag)

9. IF YOU NEED SERVICE

Contact your dealer or M&K with a complete description of the problem. Please have the unit's model and serial numbers (found on the back of the cabinet), date of purchase, and your dealer's name. You can call M&K between 8:30 AM and 5:00 PM Pacific Time, Monday through Friday, at (310) 204-2854. If you call outside these hours, leave a message, and we will return your call.

DO NOT RETURN YOUR SPEAKERS TO THE FACTORY FOR SERVICE WITHOUT OBTAINING PRIOR AUTHORIZATION.

M&K subwoofers have a five year limited parts and labor warranty. This warranty is transferable to new owners up to five years from the date of original purchase. It does not cover abuse, misuse, repairs by unauthorized service stations, speakers without serial numbers, and damage in shipping or by accident. If you have questions about the warranty, please contact M&K or your dealer.

SAVE ALL OF YOUR SUBWOOFER PACKING MATERIAL. YOU MUST USE IT ANY TIME YOU SHIP YOUR UNIT.

10. SPECIFICATIONS

V-1250THX

POWER OUTPUT:	125 watts RMS
AMPLIFIER DISTORTION:	Less than 0.03% from 20 to 125 Hz at full output into subwoofer driver
INPUT IMPEDANCE:	15 Kohms
NOISE:	better than -90 dB relative to full output
TYPICAL ROOM RESPONSE:	20 - 125 Hz ± 3 dB
DIMENSIONS (H x W x D):	18" x 15 1/4" x 23"
WEIGHT:	44 lbs.

11. CABINET MAINTENANCE

Treat this cabinet as you would any piece of fine furniture. Regular dusting with a lint-free cloth is all that is required. Do not use any solvent-based cleaners; they may damage the cabinet surface.